

# REPAIR GUIDELINE

## String Trimmer\_ST1500E-F



*Version: 1*

*Issue Date: 12/02/2016*

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# Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Not feeding line	Poor cutting line	Trimmer line	Replace the cutting line. (e.g. 2.4mm nylon line)
Hard to wind up line	Support of the lower housing assembly is worn	Lower housing assembly	Replace the lower housing assembly
Not cutting line	Blade on the guard assembly is worn	Guard assembly	Replace the guard assembly
Fail to start	The cables that connect to motor are loose or disconnected from motor.	Motor	Open the motor housing, check the cable connection with motor.
	Motor is burned	Motor	If the cables are well connected, check the motor and test with a new motor.
	PCBA is broken	PCBA in rear housing	If the cables are well connected, and motor is functional, replace the PCBA in the rear housing.
The battery pack is not connected to the trimmer properly; or hard to remove from the trimmer.	The locking mechanism is worn.	Rear housing	Replace the rear housing set.
The motor speed varies up and down when the trimmer works.	Motor was burned due to overload	Motor	Replace the motor

# Tool List For Repair

NO.	Tool List	SPEC	Remark
1	Phillips	PH2	
2	Socket wrench	14mm	
3	Torx screwdriver	T-15	
4	Hex wrench	M5	
5	Electric soldering iron		
6	Heat gun		
7	Heat shrinkable sleeves		
8	Scissors		To remove the shrinkable sleeve

# **Part 1: Replace the Motor Assembly**

# Replace the Motor Assembly

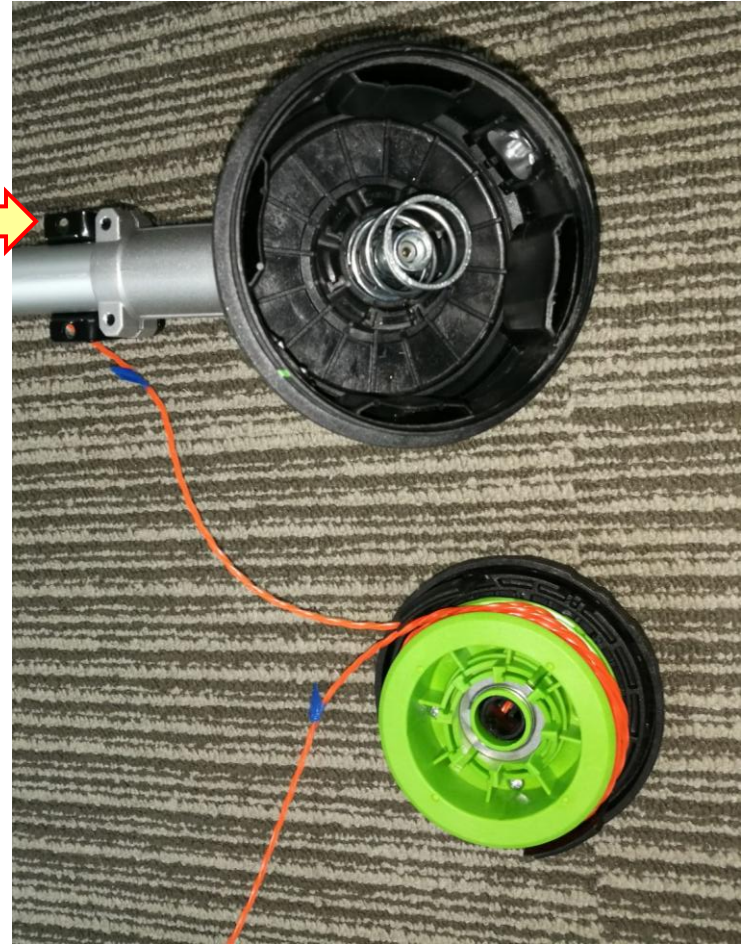
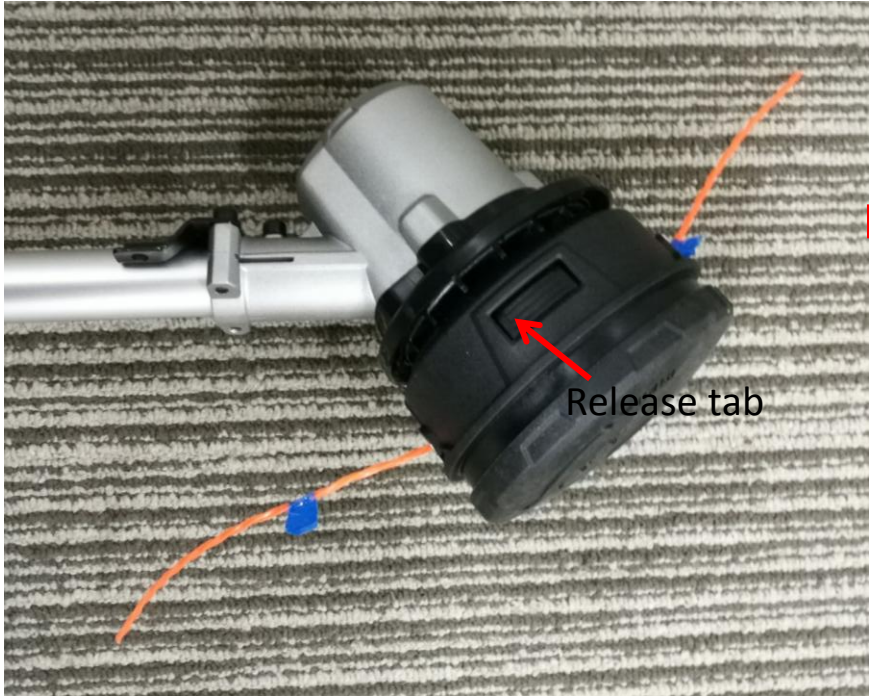
1. Stop the motor and remove the battery pack from the string trimmer.
2. Loosen the two hex bolts in the guard with the M5 hex wrench, remove the guard from the shaft.



Description	Part Number
Guard Assembly	2824871002
Hex Bolt	5620216003
Spring Washer	5650015012

# Replace the Motor Assembly

3. Press the release tabs on the lower housing assembly to remove the lower housing assembly.



Description	Part Number	Qty.
Lower Housing Assembly	2824808001	1

# Replace the Motor Assembly

4. Pull the spring out of the motor shaft .





# Replace the Motor Assembly

5. Rotate the nut counterclockwise to remove the nut.



# Replace the Motor Assembly

6. Pull washer out of the motor shaft.



# Replace the Motor Assembly

7. Pull the upper housing assembly out of the motor shaft and then pull the outer flange out of the motor shaft.



# Replace the Motor Assembly

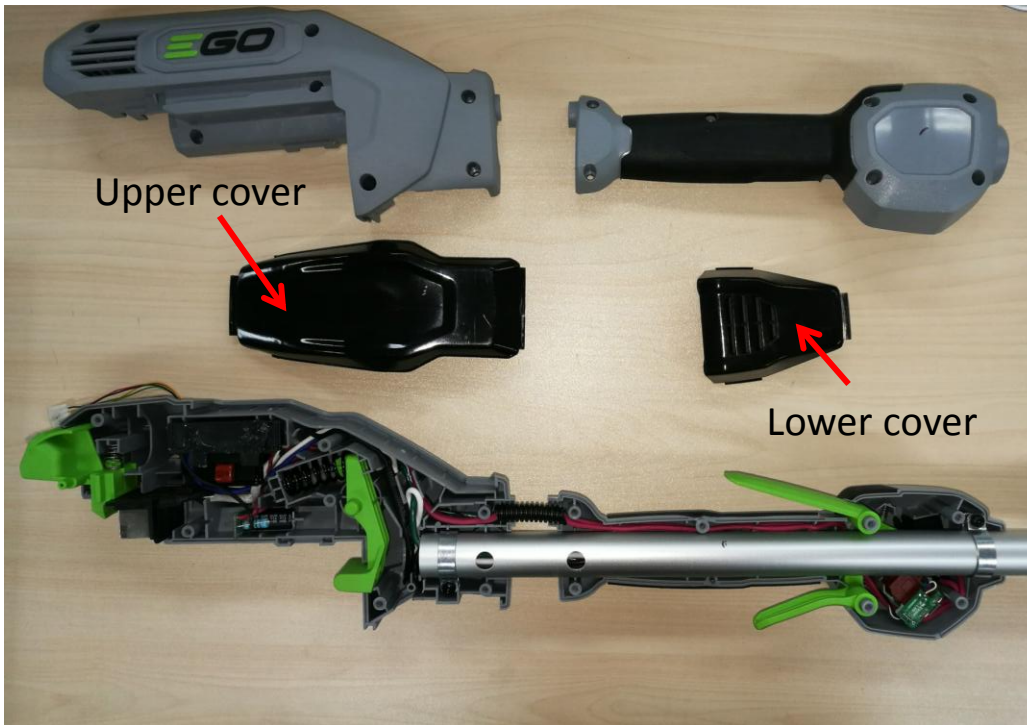
- Loosen the three screws on the shield cover, remove the shield cover from the motor assembly.



Description	Part Number	Qty.
Shield cover	3127655001	1
Screw	5610059007	1
washer	5650396003	1

# Replace the Motor Assembly

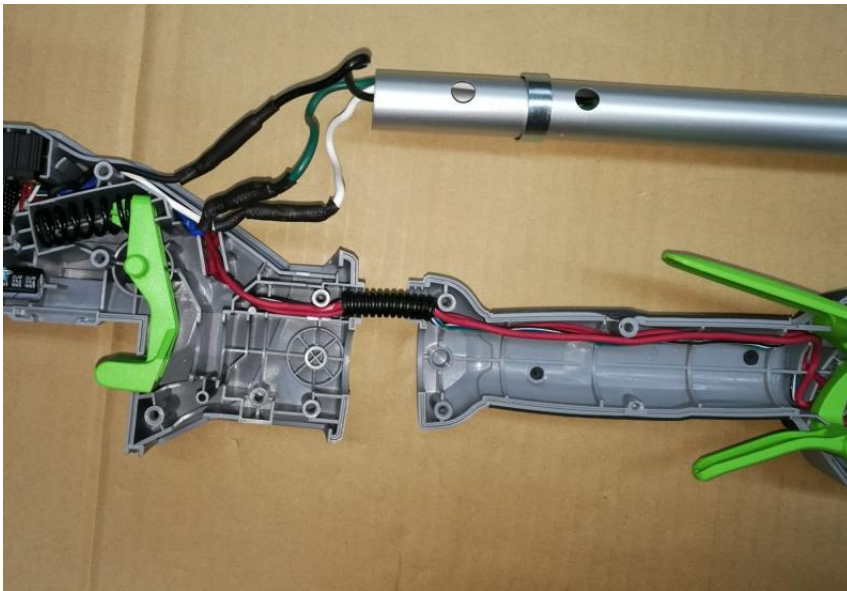
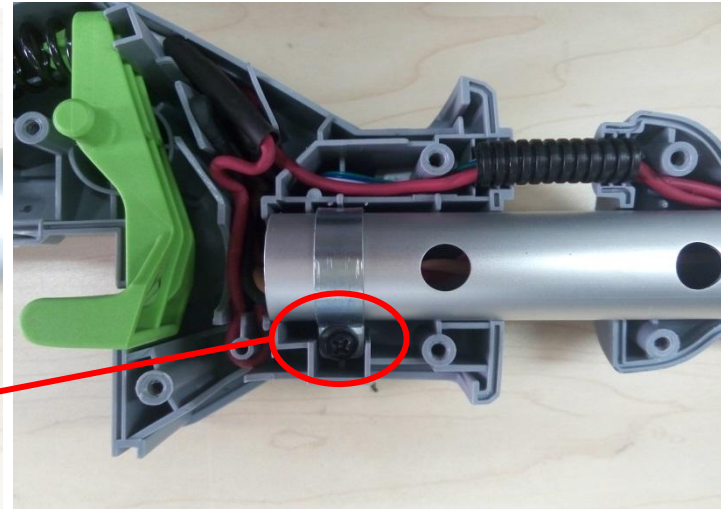
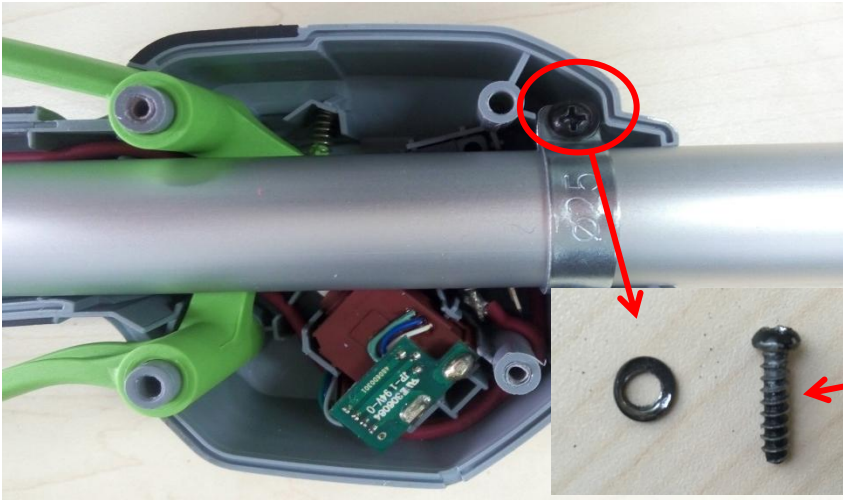
- Loosen the screws in the rear housing (7 screws) and handle assembly (7 screws), remove the housings, upper cover and lower cover.



Description	Part Number	Qty.
Tapping Screw	5610294001	14
Upper cover	3127650001	1
Lower cover	3127675002	1

# Replace the Motor Assembly

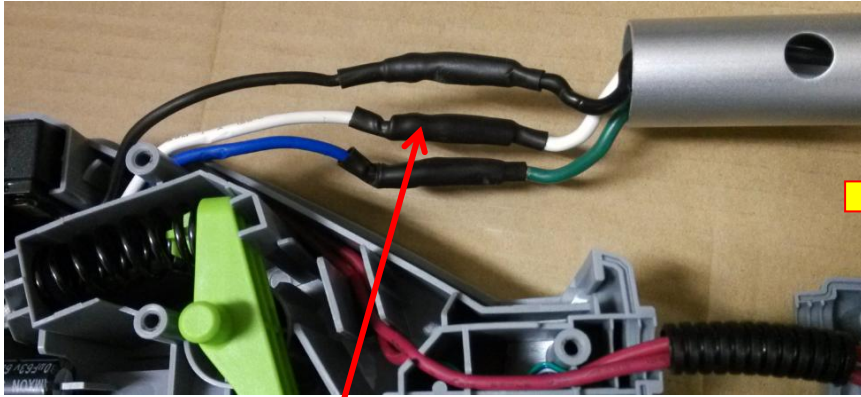
10. Loosen the two locking screws on the fixing rings, take out the shaft from the housings.



Description	Part Number	Qty.
Fixed Ring	3705178001	2
Plain Washer	5650005002	2
Tapping Screw	5610294001	2

# Replace the Motor Assembly

11. Remove the heat-shrinkable sleeves from the connectors with a scissor.
12. Move the transparent sleeves aside, and pull the connectors to separate.



Heat-shrinkable sleeve

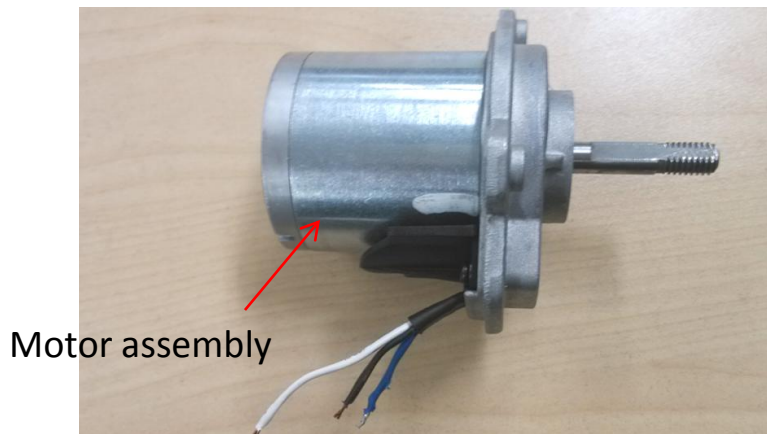
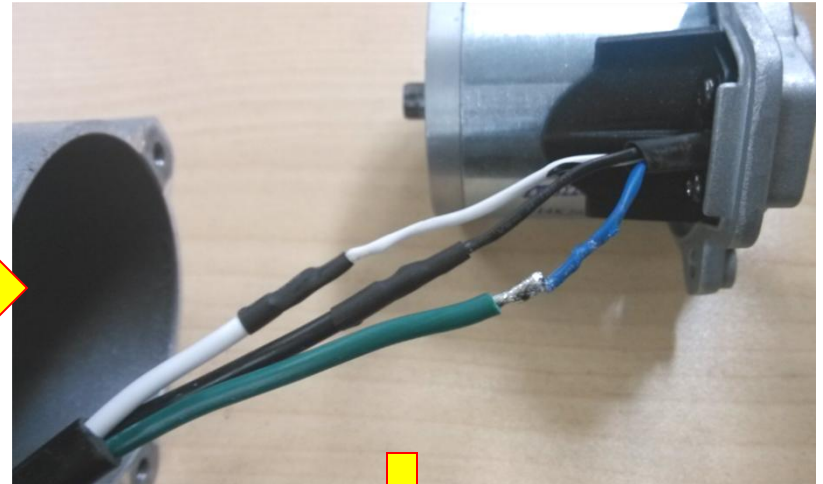
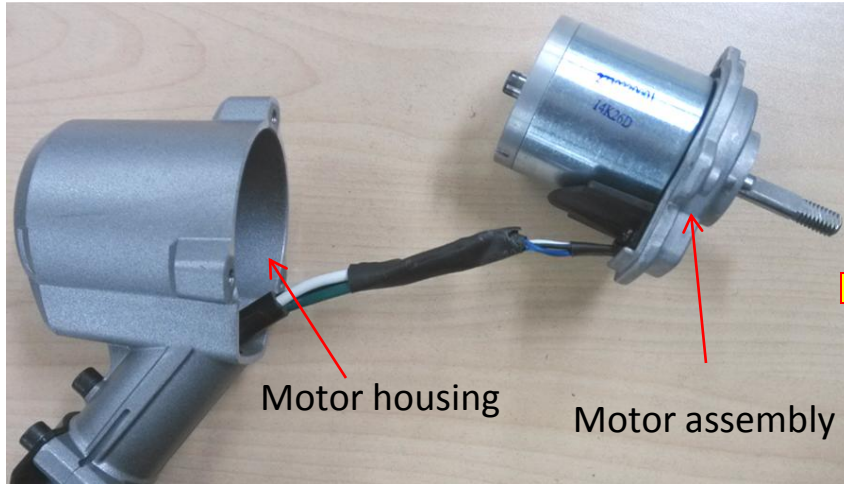


Transparent sleeve

# Replace the Motor Assembly

13. Take out the motor assembly from the motor housing.

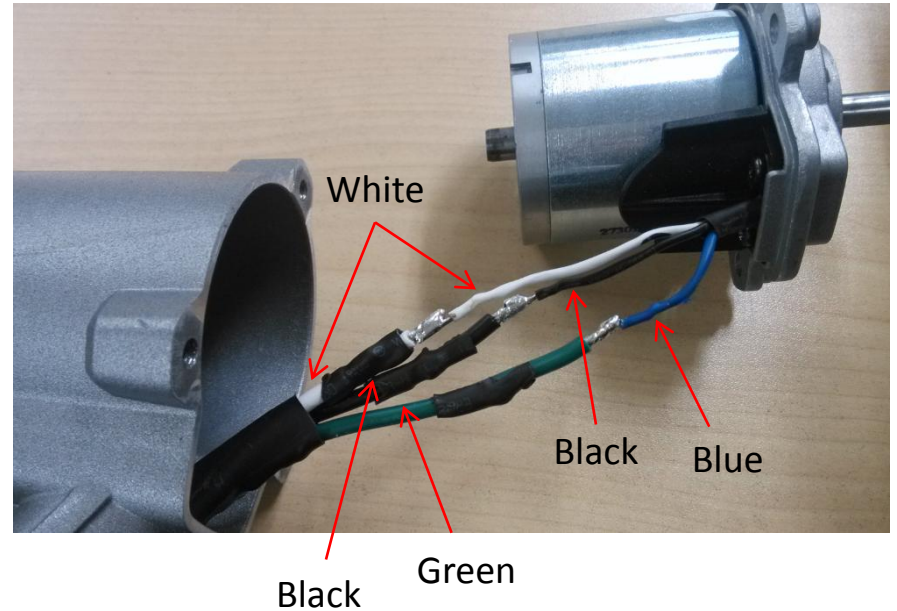
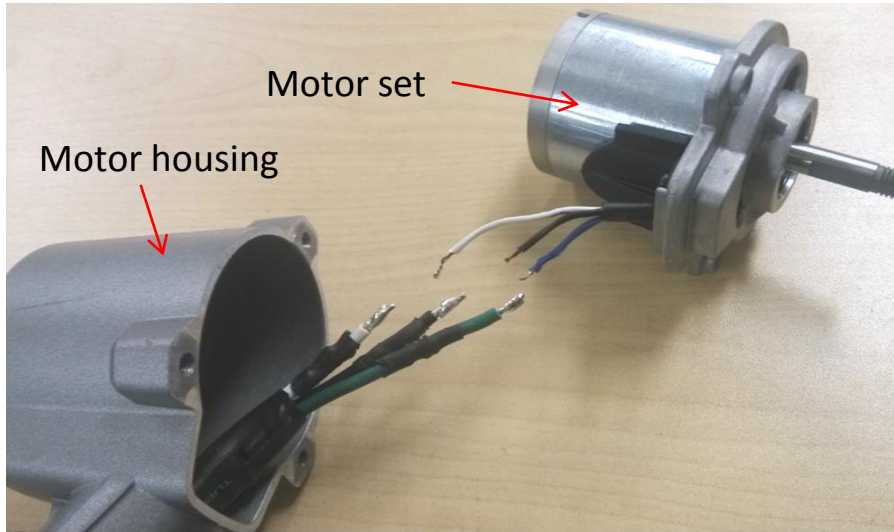
14. Remove the heat-shrinkable sleeves from the cables and disconnect the cables.





# Replace the Motor Assembly

15. Replace the damaged motor with a new one.
16. The motor housing can be replaced as well if it is broken or worn.
17. Place new heat-shrinkable sleeves over the cables. Connect the cables with electric soldering iron. Correct connection: White to White, Black to Black, Blue to Green.



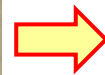
Description	Part Number	Qty.
Motor housing	3421602001	1
Motor set	2730220001	1

# Replace the Motor Assembly

18. Move the heat-shrinkable sleeves to cover the soldering points and use a hot air gun to shrink the sleeves.

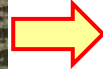


19. Position the motor assembly into the motor housing; mount the shield cover on the motor assembly and lock it with three screws and washers.



# Replace the Motor Assembly

20. Put the outer flange onto the shaft and then put the upper housing assembly onto the shaft.



# Replace the Motor Assembly

21. Mount washer onto the motor shaft.



# Replace the Motor Assembly

22. Mount the nut onto the motor shaft and then rotate the nut clockwise with a socket wrench.



# Replace the Motor Assembly

23. Mount the spring onto its position.



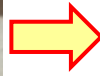
# Replace the Motor Assembly

24. Align the tabs on the lower housing assembly with the holes on the upper housing assembly to mount the lower housing assembly onto the upper housing assembly.



# Replace the Motor Assembly

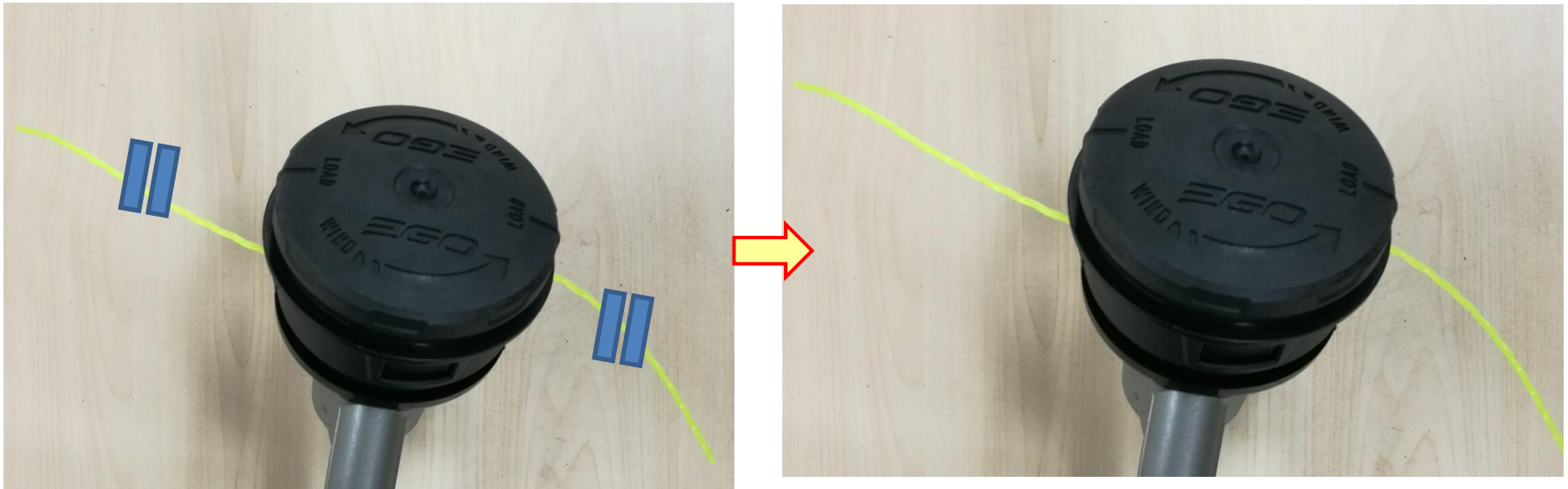
25. Rotate the lower housing assembly counterclockwise as necessary to align the mark "LOAD" on the lower housing assembly with the eyelets on the upper housing assembly.





# Replace the Motor Assembly

26. Cut one piece of trimmer line 5m long. Insert the line into the eyelet on the upper housing assembly. Push until the end of the line comes out of the other side of the upper housing assembly. Pull the line from the other side until equal amounts of line appear on both sides of the spool
27. Rotate the lower housing assembly counterclockwise to wind the line on the spool until approximately 14cm of line is showing on each side.



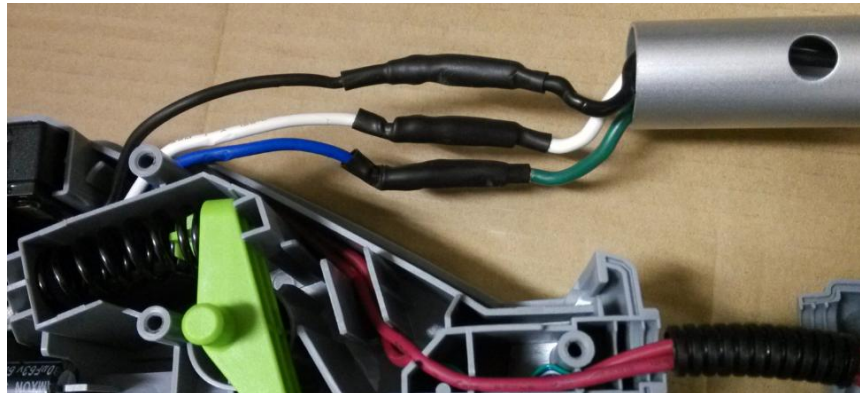
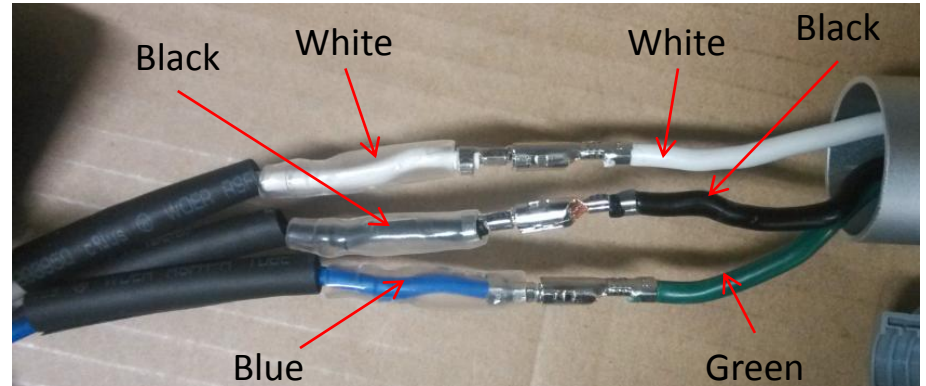
# Replace the Motor Assembly

28. Assemble the connectors in the rear housing.

- a) Place new heat-shrinkable sleeves through the connectors.
- b) Plug the three connectors and make sure they are fully insert in place.

**Correct connection:** White to White, Black to Black, Blue to Green.

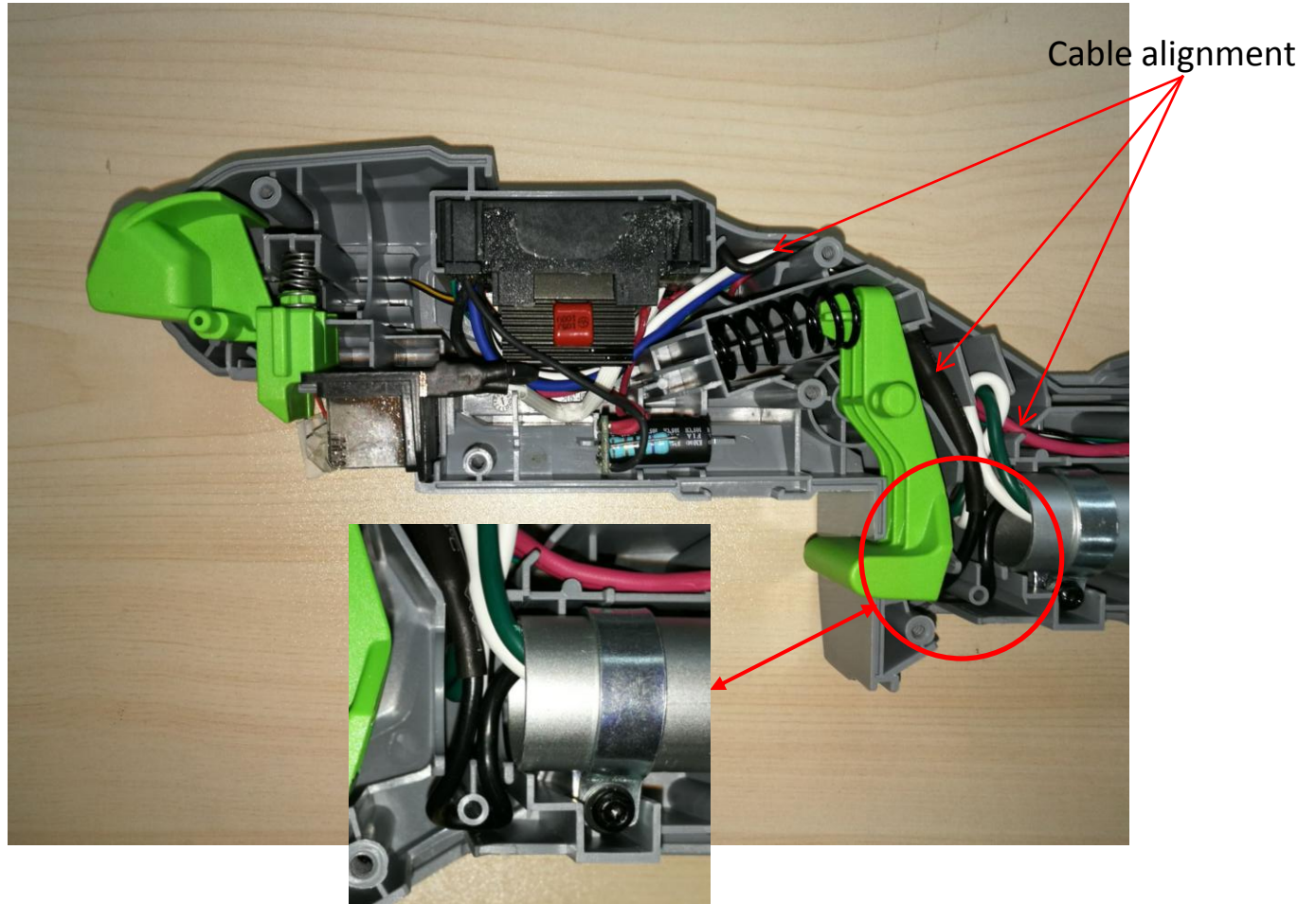
- c) Move the transparent sleeves and the heat-shrinkable sleeves to cover the connectors and use a hot air gun to shrink the sleeves.



# Replace the Motor Assembly

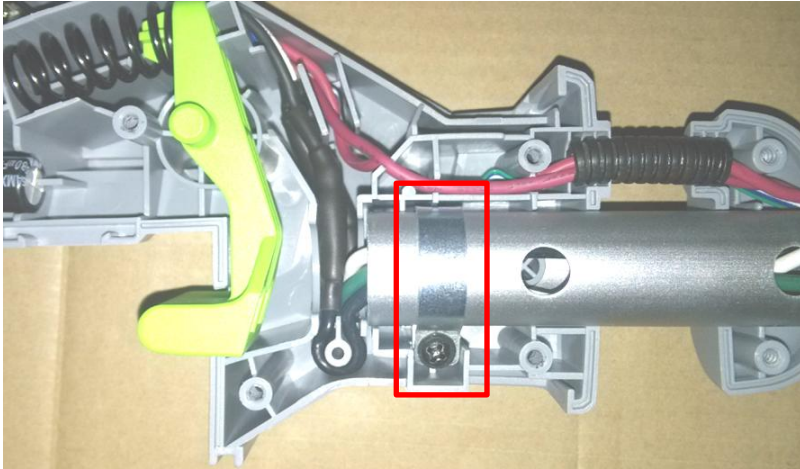
29. Align the cables in the grooves of the rear housing.

**Notice:** the **black cable** must be aligned as followed in the figure below.



# Replace the Motor Assembly

30. Position the shaft in the rear housing and handle housing, lock it by the fixed rings with the tapping screws.



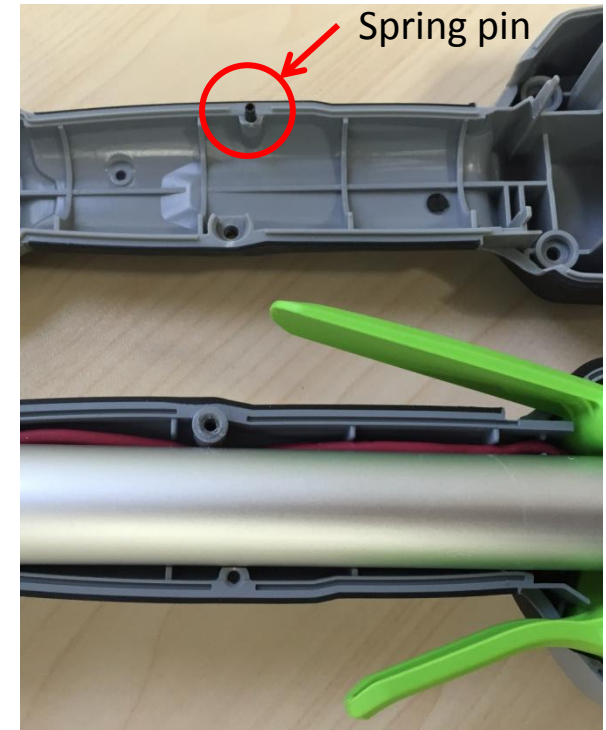
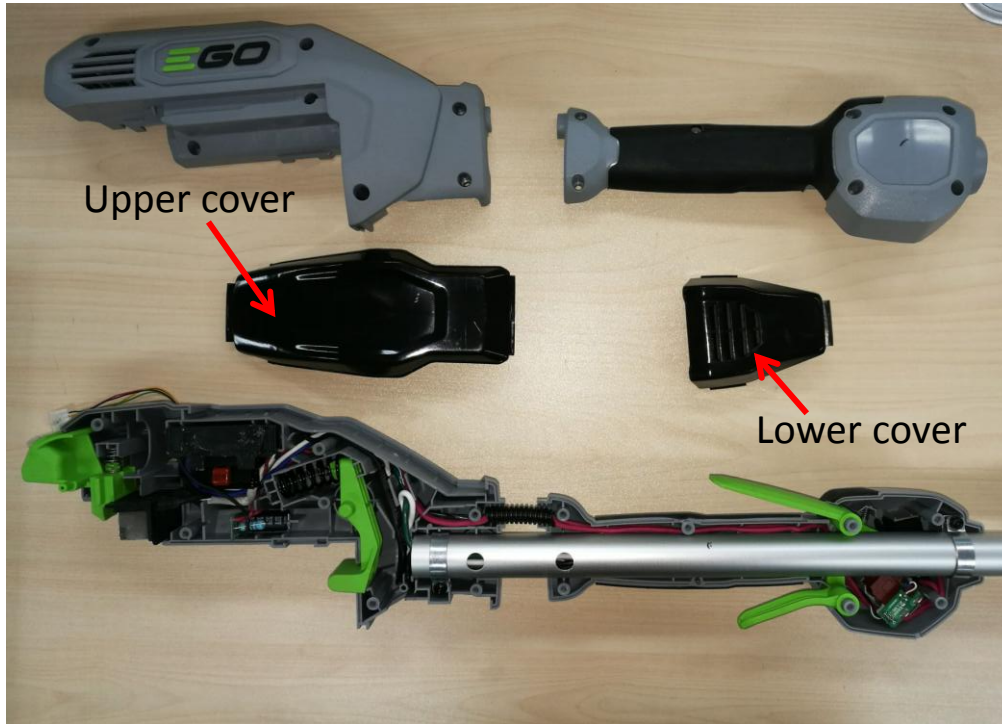
31. Close the handle housing, put the support leg and upper cover into position, then close the rear housing, lock the housings with 14 tapping screws.



## **Part 2: Replace the PCBA**

# Replace the PCBA

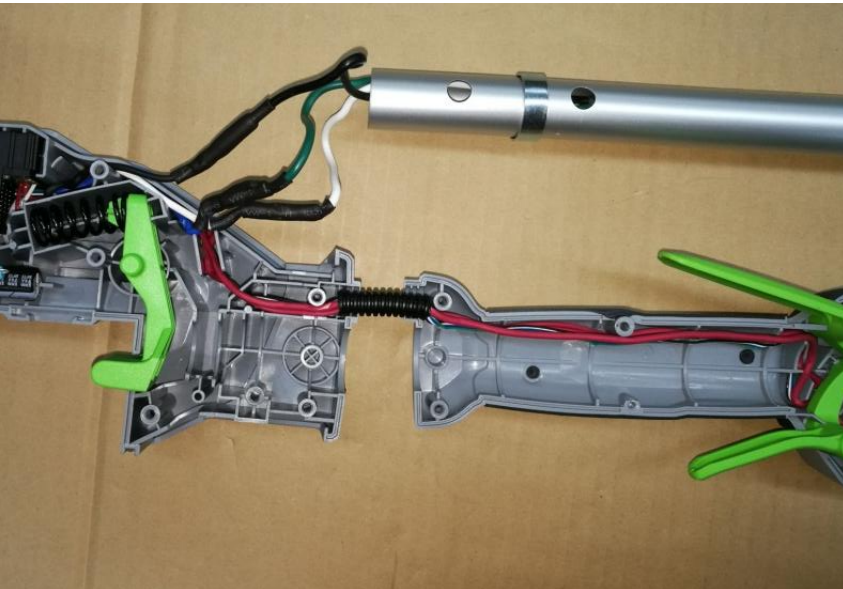
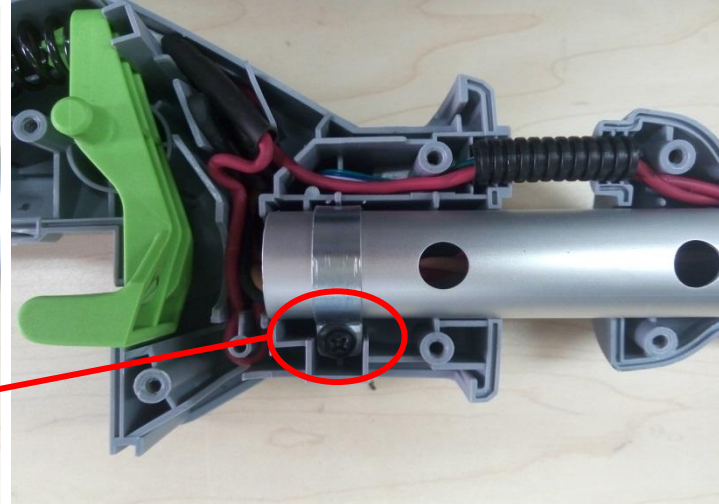
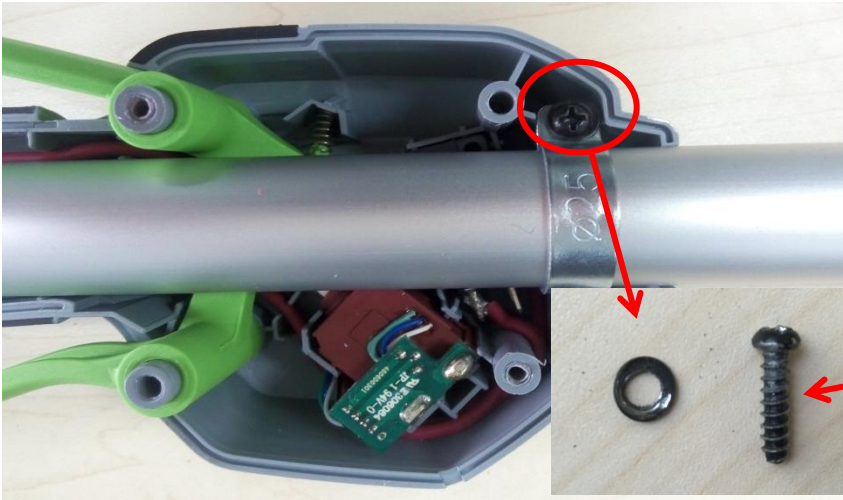
1. Loosen the screws in the rear housing (7 screws) and handle assembly (7 screws), remove the housings, upper cover and lower cover.



Description	Part Number	Qty.
Tapping Screw	5610294001	14
Upper cover	3127650001	1
Lower cover	3127675002	1

# Replace the PCBA

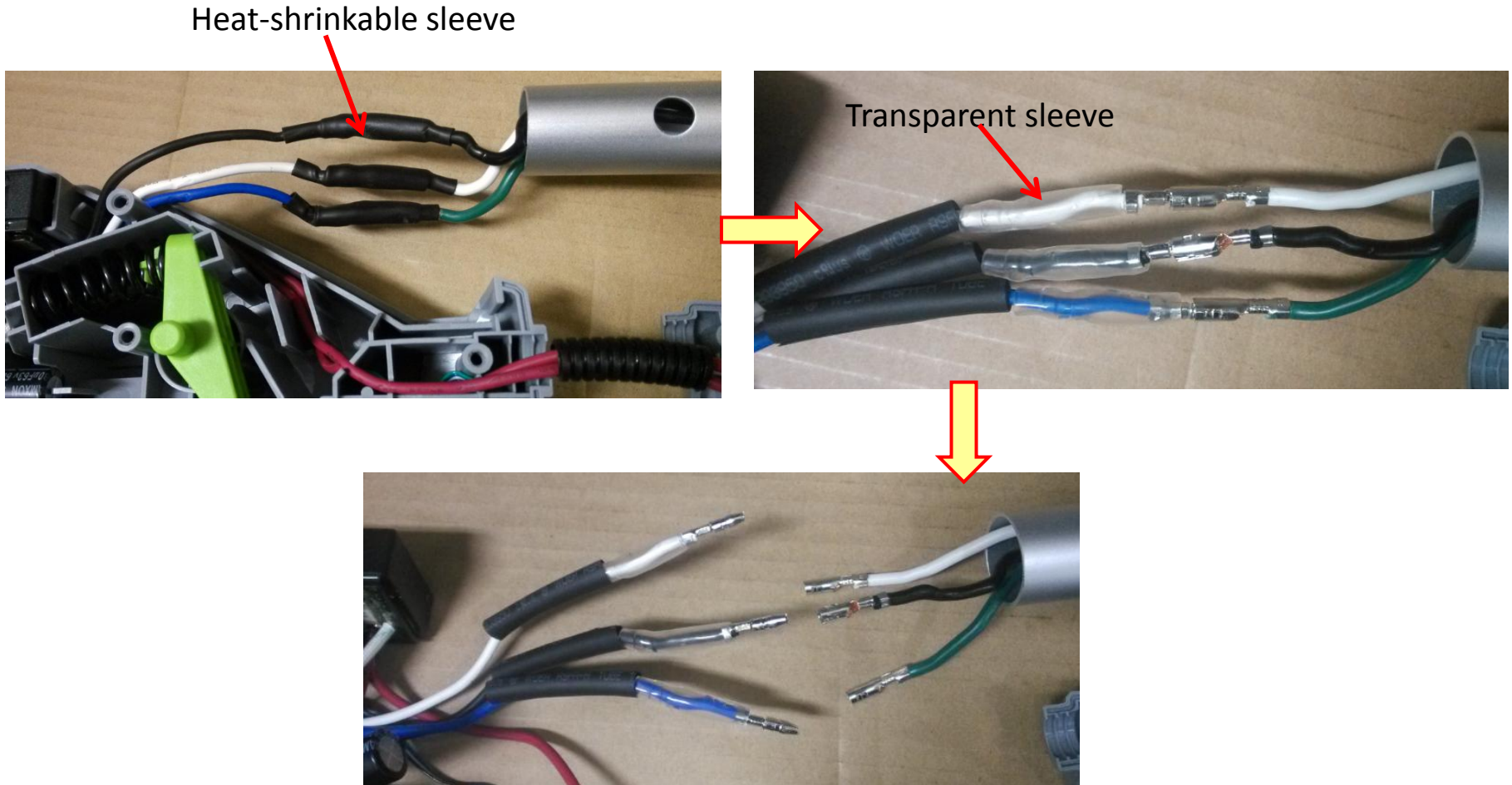
2. Loosen the two locking screws on the fixed rings, take out the shaft from the housings.



Description	Part Number	Qty.
Fixed Ring	3705178001	2
Plain Washer	5650005002	2
Tapping Screw	5610294001	2

# Replace the PCBA

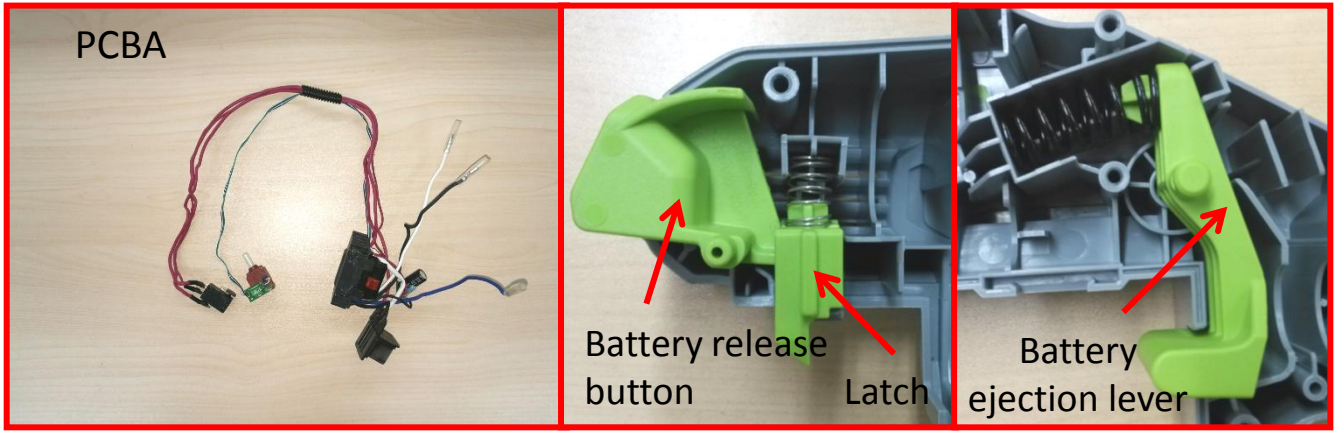
3. Remove the heat-shrinkable sleeves from the connectors with a scissor.
4. Move the transparent sleeves aside, pull the connectors to separate.





# Replace the PCBA

5. Take out the PCBA from the housings. Replace it with a new one.
6. The battery release button, latch, battery ejection lever, housings can be replaced if they are broken or worn.



Description	Part Number
PCBA	2830204001
Battery release button	3127201001
Latch	3127202001
Battery ejection lever	3127206001
Rear housing	2824012001
Handle housing	2824018001

# Replace the PCBA

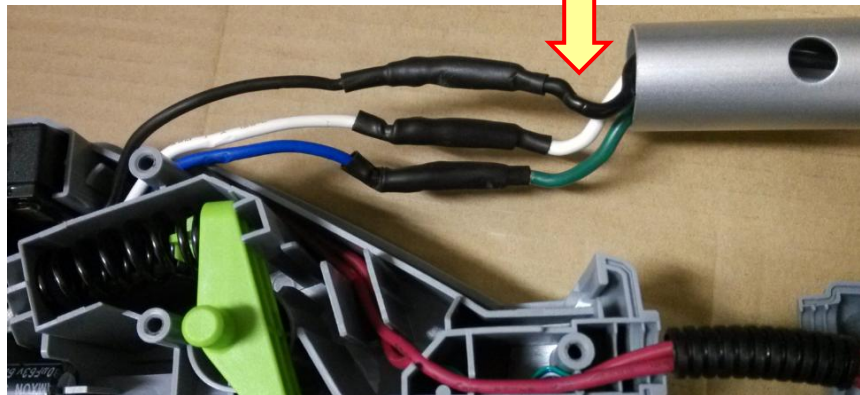
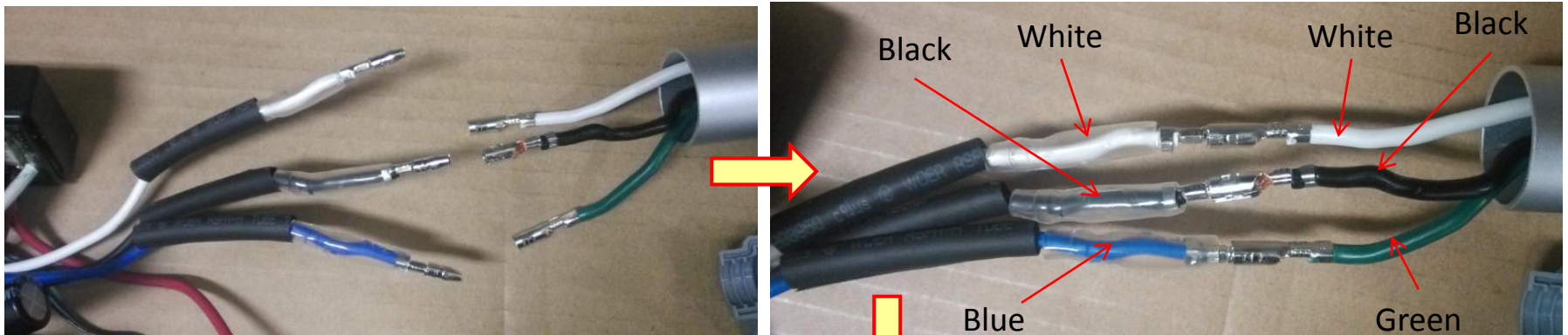
7. Assemble the connectors in the rear housing.

a) Place new heat-shrinkable sleeves through the connectors.

b) Plug the three connectors and make sure they are fully inserted in place.

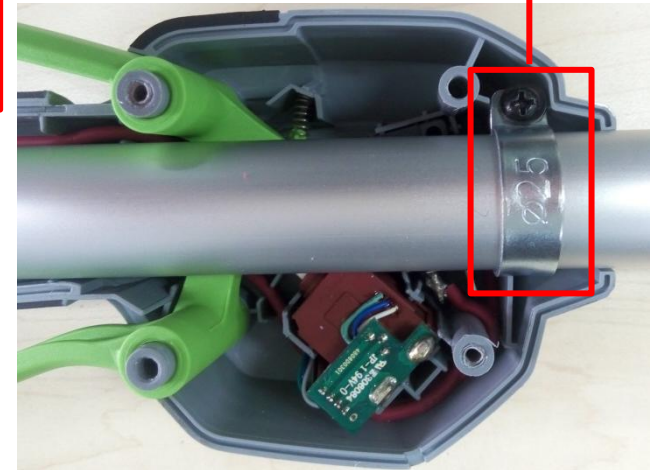
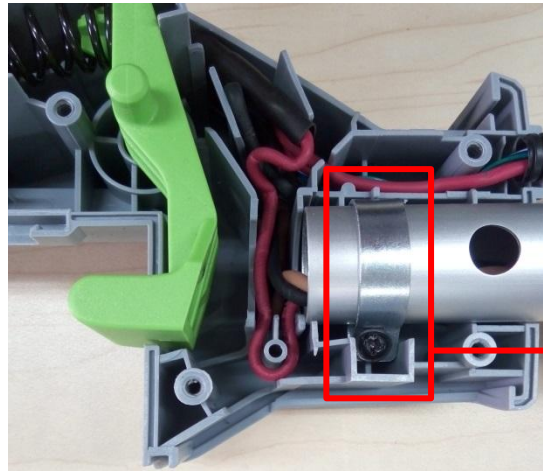
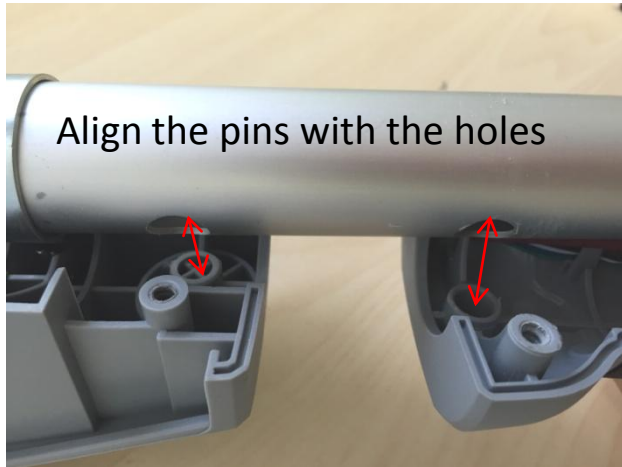
**Correct connection:** White to White, Black to Black, Blue to Green.

c) Move the transparent sleeves and the heat-shrinkable sleeves to cover the connectors and use a hot air gun to shrink the sleeves.



# Replace the PCBA

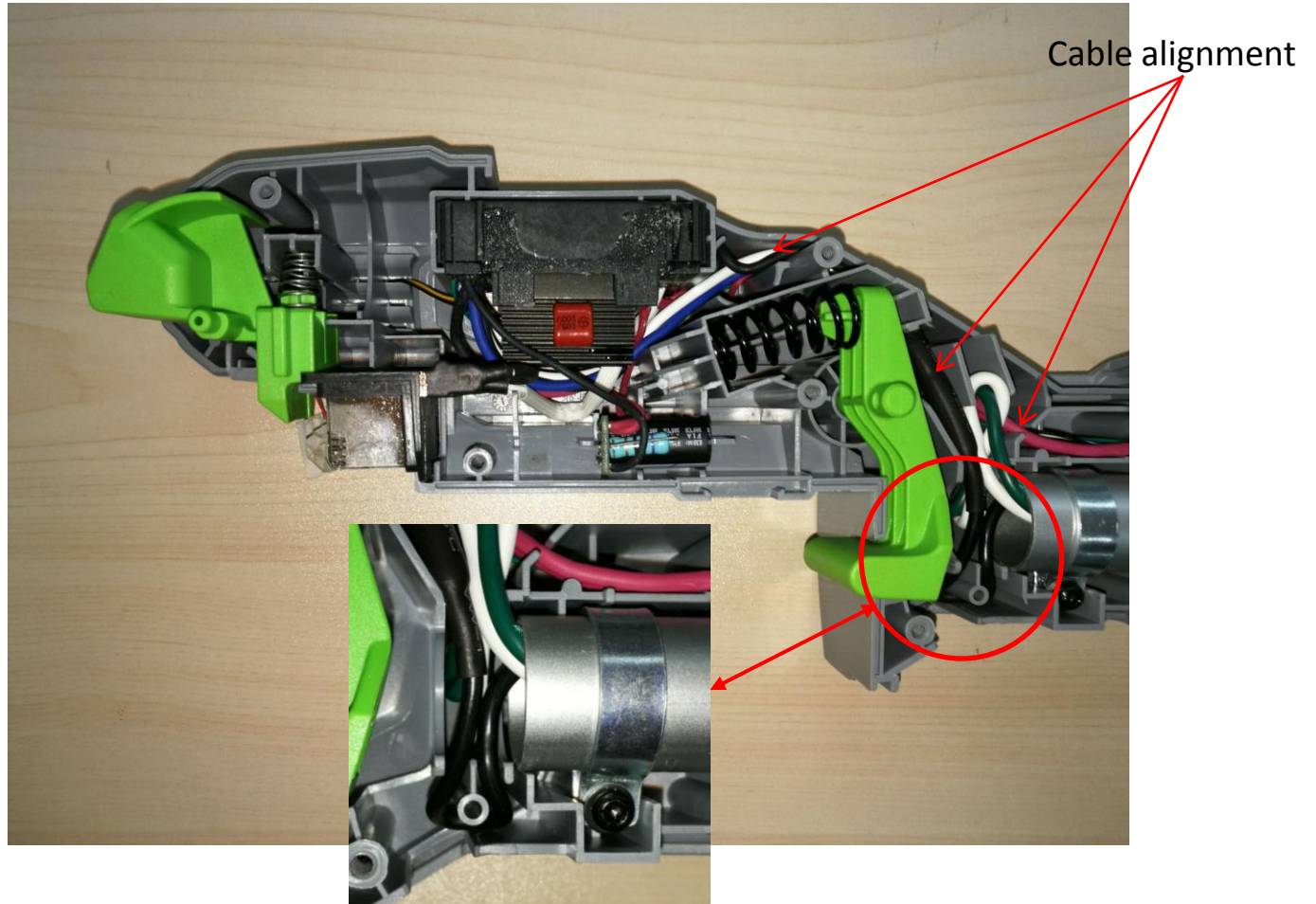
8. Align the locating pins on the housings with the holes in the shaft so as to put the shaft into place both in the rear housing and handle housing, lock it by the fixed rings with tapping screw and washer.



# Replace the PCBA

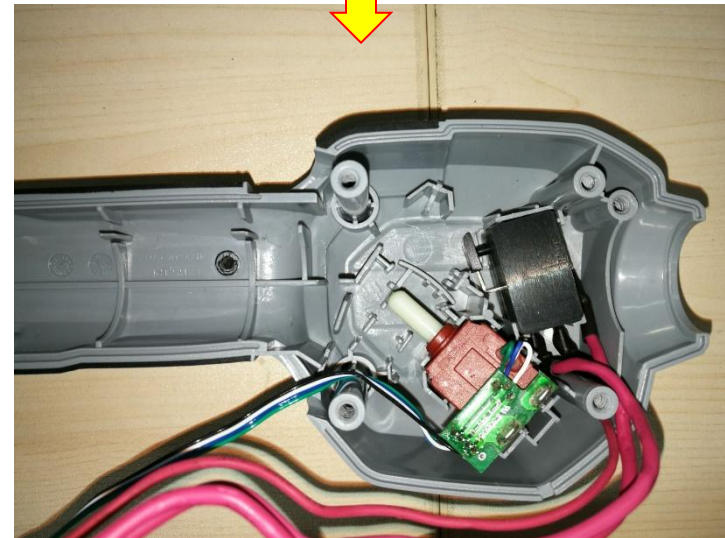
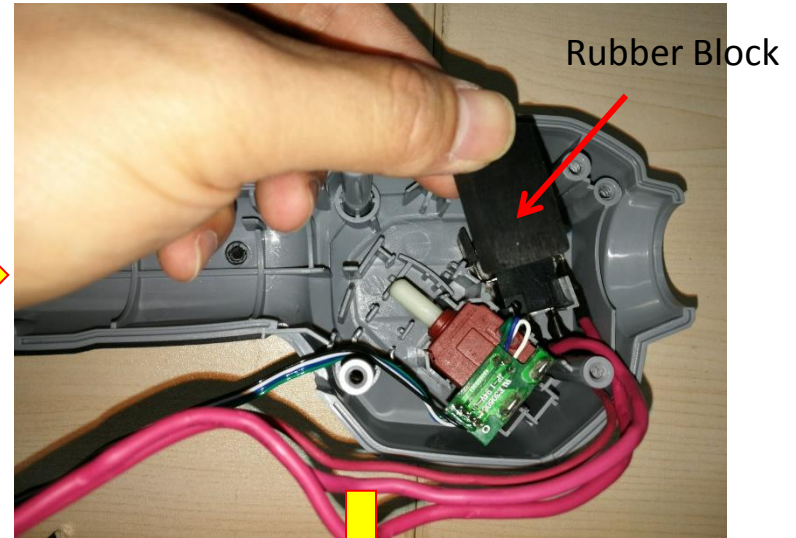
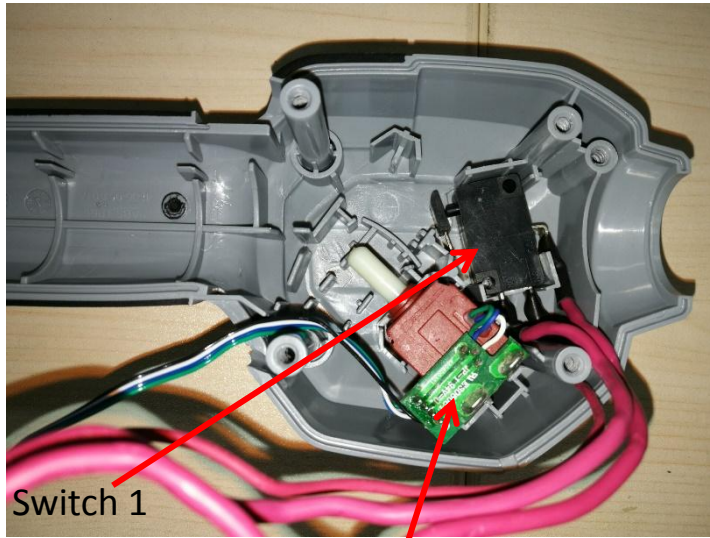
9. Align the cables in the grooves of the rear housing.

**Notice:** the **black cable** must be aligned as followed in the figure below.



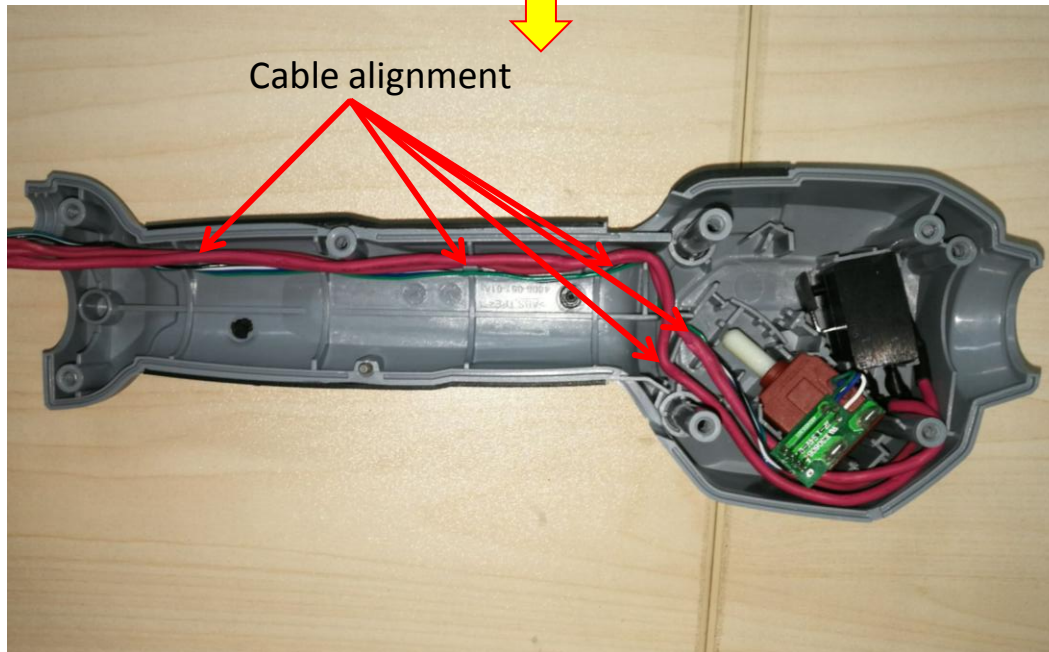
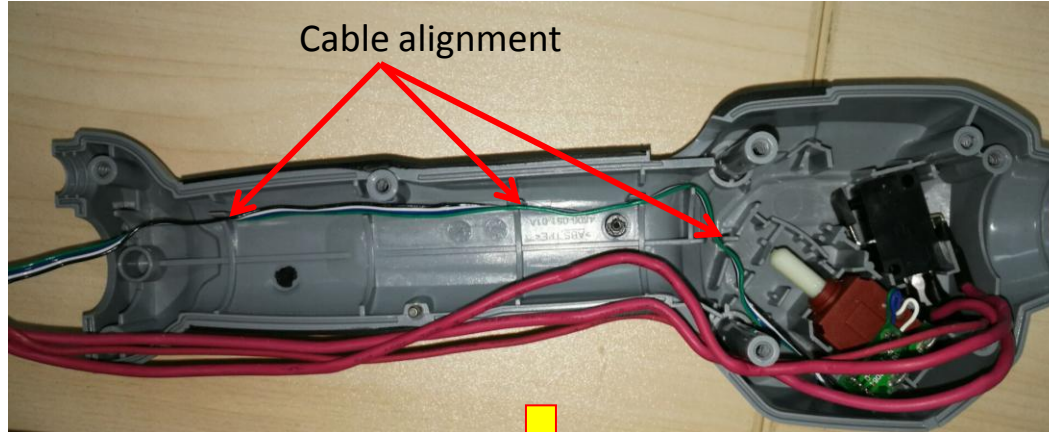
# Replace the PCBA

10. Fix the switches into the handle housing, and put the rubber block into the groove of switch 1.



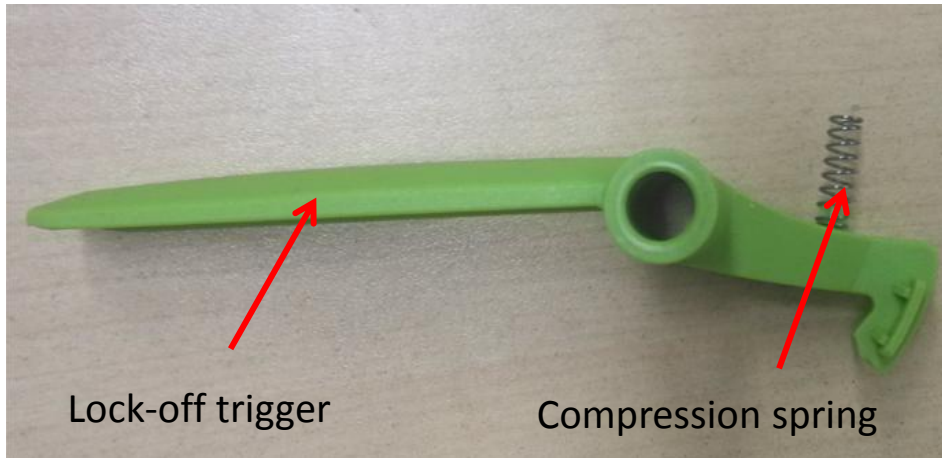
# Replace the PCBA

11. Align the cables in the grooves.



# Replace the PCBA

12. Replace the lock-off trigger or switch trigger if they are broken.

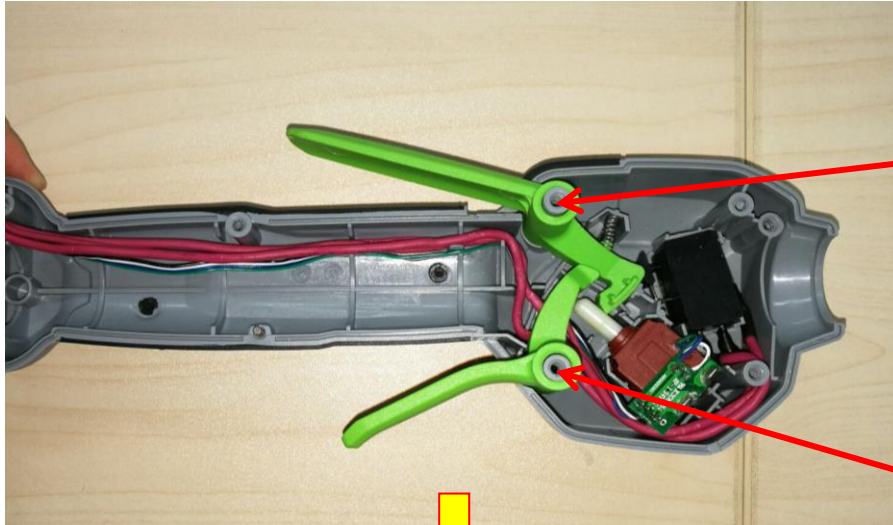


Description	Part Number	Qty.
Lock-off Trigger	3127654001	1
Compression Spring	3660030005	1
Switch Trigger	3127653001	1

# Replace the PCBA

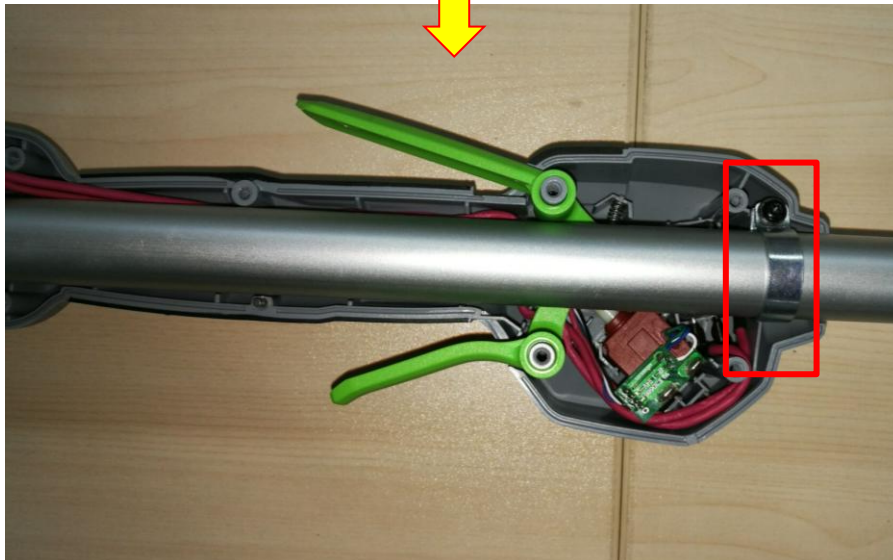
13. Mount the interlock trigger and switch trigger into the handle housing.

14. Position the shaft in the handle housing, lock it by the fixed ring with the tapping screw.



Align the fixing hole in the interlock trigger with the fixing pole in handle and push the trigger in place

Align the fixing hole in the switch trigger with the fixing pole in handle and push the trigger in place





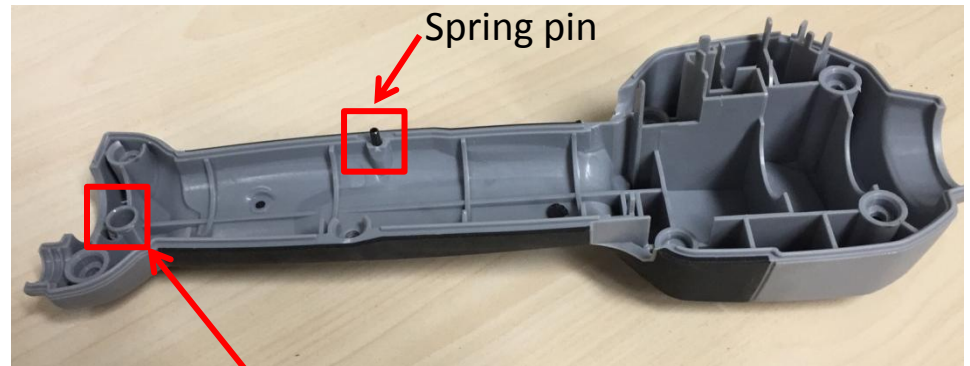
# Replace the PCBA

15. Close the handle housing, put the lower cover and upper cover into position, then close the rear housing(pictures on next page).

**NOTICE:** The locating pin in the rear housing and handle housing must align with the fixing hole in the shaft.



Fixing hole in the shaft



Fixing pole in the handle housing



Fixing pole in the rear housing

# Replace the PCBA

16. Lock the housings with 14 tapping screws.

